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**Abstract of the Disclosure**

Method and arrangement are disclosed for a power distribution network for distributing power to VCSELS on an optoelectronic chip that maintains a constant bias voltage to the VCSELS. More particularly, the power distribution network includes an H-tree network for directing a power signal. The H-tree network includes a primary input for receiving the power signal and at least one level, with terminal nodes coupled to the last level, and each level includes a plurality of segments. Each segment of a respective level is equal in length and the total number of segments from the primary input to each terminal node is the same. Since the distance from the primary input to each terminal node is equal, greater bias voltage uniformity is provided to the terminal nodes. A similar distribution network is used for the ground connection.